## **ABSTRACT**

The present invention provides novel immunotoxins and methods of treating neoplastic diseases. These immunotoxins are comprised of a conjugation of an antigen binding region exhibiting binding specificity for the CD33 protein and a cell growth modulator. The immunotoxins of the present invention specifically and selectively kill tumor cells that are characterized by the expression of CD33 antigen. Thus, the novel immunotoxins would be useful in treating human leukemias, both acute and chronic, and other myelodysplastic syndromes.